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1AP20 Rec'd PCT/PTO 05 JUL 2006

<110> Avalon Pharmaceuticals

<120> Cancer-Linked Genes as Targets for Chemotherapy

<130> 689290-234

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<150> 60/534,419

<151> 2004-01-06

<160> 69

<170> PatentIn version 3.3

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Ala Lys Ala Ala Pro Glu Gly Gln Val Arg Val Pro Phe Leu Glu Glu
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Ala Gly Ala Arg Lys Ala Val Thr Leu Ala Leu Ala Thr Gly Phe Pro
65 70 75 80

Gly Ala Val Leu Ser Gln Glu Leu His Ser Ala Gly His Leu Gln Lys
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Thr Val Phe Arg Val Tyr Phe Leu Leu Ser Ser Thr Gln Ser Pro Thr
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Ala Ala Asn Ala Arg Gly Gln Lys Met Phe Gly Gly Arg Lys Thr Lys
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Ala Gly Ser Gly Gly Leu Thr Val Arg Val Cys Leu Gln Arg Arg
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Glu Gly Ala Gly Ser Val Ser Ser Cys Phe Ser Lys Leu Gln Gly Pro
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Ser	Glu	Phe	Gly	Ala	Pro	Arg	Trp	Asn	Asp	Tyr	Glu	Val	Pro	Glu	Glu	
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Phe	Asn	Phe	Ala	Ser	Tyr	Val	Leu	Asp	Tyr	Trp	Ala	Gln	Lys	Glu	Glu	
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Gly Asp Glu Val Lys Trp Ser Phe Arg Glu Met Gly Asp Leu Thr Arg
85 90 95

Arg Val Ala Asn Val Phe Thr Gln Thr Cys Gly Leu Gln Gln Gly Asp
100 105 110

His Leu Ala Leu Met Leu Pro Arg Val Pro Glu Trp Trp Leu Val Ala
115 120 125

Val Gly Cys Met Arg Thr Gly Ile Ile Phe Ile Pro Ala Thr Ile Leu
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Leu Lys Ala Lys Asp Ile Leu Tyr Arg Leu Gln Leu Ser Lys Ala Lys
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Gly Ile Val Thr Ile Asp Ala Leu Ala Ser Glu Val Asp Ser Ile Ala
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Ser Gln Cys Pro Ser Leu Lys Thr Lys Leu Leu Val Ser Asp His Ser
180 185 190

Arg Glu Gly Trp Leu Asp Phe Arg Ser Leu Val Lys Ser Ala Ser Pro
195 200 205

Glu His Thr Cys Val Lys Ser Lys Thr Leu Asp Pro Met Val Ile Phe
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Phe Thr Ser Gly Thr Thr Gly Phe Pro Lys Met Ala Lys His Ser His
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Gly Leu Ala Leu Gln Pro Ser Phe Pro Gly Ser Arg Lys Leu Arg Ser
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Val Ala Thr Ile Trp Thr Leu Val Glu Pro Trp Thr Ala Gly Cys Thr
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Val Phe Ile His His Leu Pro Gln Phe Asp Thr Lys Val Ile Ile Gln
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Thr Leu Leu Lys Tyr Pro Ile Asn His Phe Trp Gly Val Ser Ser Ile
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Tyr Arg Met Ile Leu Gln Gln Asp Phe Thr Ser Ile Arg Phe Pro Ala
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Leu Glu His Cys Tyr Thr Gly Gly Glu Val Val Leu Pro Lys Asp Gln
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Gln Ser Glu Thr Gly Leu Ile Cys Ala Thr Tyr Trp Gly Met Lys Ile
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Lys Pro Gly Phe Met Gly Lys Ala Thr Pro Pro Tyr Asp Val Gln Val
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Ile Asp Asp Lys Gly Ser Ile Leu Pro Pro Asn Thr Glu Gly Asn Ile
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Gly Ile Arg Ile Lys Pro Val Arg Pro Val Ser Leu Phe Met Cys Tyr
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Glu Gly Asp Pro Glu Lys Thr Ala Lys Val Glu Cys Gly Asp Phe Tyr
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Asn Thr Gly Asp Arg Gly Lys Met Asp Glu Glu Gly Tyr Ile Cys Phe
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Leu Gly Arg Ser Asp Asp Ile Ile Asn Ala Ser Gly Tyr Arg Ile Gly
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Pro Ala Glu Val Glu Ser Ala Leu Val Glu His Pro Ala Val Ala Glu
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Ser Ala Val Val Gly Ser Pro Asp Pro Ile Arg Gly Glu Val Val Lys
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Ala Phe Ile Val Leu Thr Pro Gln Phe Leu Ser His Asp Lys Asp Gln
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Leu Thr Lys Glu Leu Gln Gln His Val Lys Ser Val Thr Ala Pro Tyr
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Lys Tyr Pro Arg Asn Val Glu Phe Val Ser Glu Leu Pro Lys Thr Ile
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Tyr	Ser	Ile	Pro	Glu	Glu	Thr	Glu	Ser	Gly	Tyr	Ser	Val	Ala	Asn	Leu
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Ala	Lys	Asp	Leu	Gly	Leu	Gly	Val	Gly	Glu	Leu	Ala	Thr	Arg	Gly	Ala
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Arg	Met	His	Tyr	Lys	Gly	Asn	Lys	Glu	Leu	Leu	Gln	Leu	Asp	Ile	Lys
65					70				75				80		

Thr	Gly	Asn	Leu	Leu	Tyr	Glu	Lys	Leu	Asp	Arg	Glu	Val	Met	Cys
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Gly	Ala	Thr	Glu	Pro	Cys	Ile	Leu	His	Phe	Gln	Leu	Leu	Leu	Glu	Asn
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Pro	Val	Gln	Phe	Phe	Gln	Thr	Asp	Leu	Gln	Leu	Thr	Asp	Ile	Asn	Asp
	115				120					125					

His	Ala	Pro	Glu	Phe	Pro	Glu	Lys	Glu	Met	Leu	Leu	Lys	Ile	Pro	Glu
	130				135					140					

Ser	Thr	Gln	Pro	Gly	Thr	Val	Phe	Pro	Leu	Lys	Ile	Ala	Gln	Asp	Phe
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Asp	Ile	Gly	Ser	Asn	Thr	Val	Gln	Asn	Tyr	Thr	Ile	Ser	Pro	Asn	Ser
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170

175

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Ser Leu Thr Leu Thr Ala Leu Asp Gly Gly Ala Pro Pro Arg Ser Gly
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Thr Thr Thr Ile Arg Ile Val Val Leu Asp Asn Asn Asp Asn Ala Pro
225 230 235 240

Glu Phe Leu Gln Ser Phe Tyr Glu Val Gln Val Pro Glu Asn Ser Pro
245 250 255

Leu Asn Ser Leu Val Val Val Ser Ala Arg Asp Leu Asp Ala Gly
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Ala Tyr Gly Ser Val Ala Tyr Ala Leu Phe Gln Gly Asp Glu Val Thr
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Gln Pro Phe Val Ile Asp Glu Lys Thr Ala Glu Ile Arg Leu Lys Arg
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Ser Pro Thr Pro Glu Asn Ala Pro Glu Thr Val Val Ala Val Phe Ser
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370 375 380

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Asn Ile Thr Ile Thr Val Thr Asp Met Gly Thr Pro Arg Leu Lys Thr
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Arg Ala Ala Glu Pro Gly Tyr Leu Val Thr Lys Val Val Ala Val Asp
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Gly Asp Ser Gly Gln Asn Ala Trp Leu Ser Tyr Gln Leu Leu Lys Ala
595 600 605

Thr Glu Pro Gly Leu Phe Ser Met Trp Ala His Asn Gly Glu Val Arg
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 660 665 670

Pro Glu Ala Ala Pro Ala Gln Ala Gln Ala Asp Ser Leu Thr Val Tyr
 675 680 685

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 690 695 700

Leu Leu Phe Val Ala Val Arg Leu Cys Arg Arg Ser Arg Ala Ala Ser
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Val Gly Arg Cys Ser Val Pro Glu Gly Pro Phe Pro Gly His Leu Val
 725 730 735

Asp Val Ser Gly Thr Gly Thr Leu Ser Gln Ser Tyr His Tyr Glu Val
 740 745 750

Cys Leu Thr Gly Asp Ser Gly Ala Gly Glu Phe Lys Phe Leu Lys Pro
 755 760 765

Ile Ile Pro Asn Leu Leu Pro Gln Gly Ala Gly Glu Glu Ile Gly Lys
 770 775 780

Thr Ala Ala Phe Arg Asn Ser Phe Gly Leu Asn
 785 790 795

<210> 16
 <211> 332
 <212> DNA
 <213> Artificial

<220>
 <223> cDNA or putative protein derived from a cDNA.

<400> 16
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 aaccactgca ctgacacctgca tttatgaaca ctgtgttcat aaagttgatg ttcactgaaa 180
 ctcccttaat tccctgagtg tgctgcccct ttagttgcc acctatgaga taggttagta 240
 ctatcatcaa tttccatttt acagatgagg gaagtggggg ttagacaggg taacaaattt 300
 tcccaacatc acacagctag cagtatatac tg 332

<210> 17
 <211> 540
 <212> DNA
 <213> Artificial
 <220>
 <223> cDNA or putative protein derived from a cDNA.

<400> 17

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agaccaggc	agaatgcatac	tcttccttc	tcttggctt	cctggataag	gactgcatca	180
tccctgttga	aggacaggcc	atcagctccg	aaacactgta	tgtatttcc	agtatatact	240
gctagctgt	tgatgtggg	aaaatttgg	accctgtcta	accccccactt	ccctcatctg	300
taaaatggaa	ataatgatag	tacctacca	tctcataggt	ggcaactaca	aggggcagca	360
cactcaggga	attaaggaag	tttcagtgaa	catcaacttt	atgaacacag	tgttcataaaa	420
gjcaggtcag	tgca	tttgcgtt	tgggagccag	gagaagcacg	tgcccggag	480
ggagacaagg	tcagagatgt	tgctaataat	ggagaataaa	ggatgcattc	tcattactga	540

<210> 18

<211> 80

<212> PRT

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 18

Glu	Leu	Glu	Val	Phe	Gly	Asp	Asn	Ser	Val	Leu	His	Lys	Ile	Cys	Lys
1									5			10		15	

Ser	Leu	Asp	Lys	Glu	Ala	Glu	Ile	Pro	Ala	Trp	Asp	Lys	Trp	Ser	Leu
								20			25		30		

Lys	Ser	Gly	Lys	Lys	Thr	Glu	Lys	Thr	Arg	Ala	Glu	Cys	Ile	Ser	Ser
							35			40		45			

Phe	Leu	Leu	Ala	Phe	Leu	Asp	Lys	Asp	Cys	Ile	Ile	Pro	Val	Glu	Gly
							50		55		60				

Gln	Ala	Ile	Ser	Ser	Glu	Thr	Leu	Tyr	Val	Phe	Ser	Ser	Ile	Tyr	Cys
							65		70		75		80		

<210> 19

<211> 293

<212> DNA

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 19

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ggaatataagg	aagtttcagt	gaacatcaac	tttatgaaca	cagtgttcat	aaaggcaggt	180
cagtgcagtg	gtttgggagc	caggagaagc	acgtggccg	gagtgtgcct	gcaggagaca	240
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<210> 20

<211> 832

<212> DNA

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<220>

<223> cDNA or putative protein derived from a cDNA.

<220>

<221> misc_feature

<222> (1)..(832)

<223> n is a, c, g, or t

<400> 20

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tacctactaa	aaaccacact	tctgaagcta	cgtggccacc	agaagacaca	gctagtcgtgc	180
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ggagacccca	acagccagca	tcaagtggccc	tcatcacagc	cctccaggag	atatcaaagg	300
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gacctatagc	aaggccttgg	gagaaatggt	gttgcagcag	gagagcagga	acctaaccat	420
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ttgataatct	aaatggatgt	agctgactca	ttattgcggt	atgtataggg	atgaggaagt	540
aactgtaatg	tagtgagga	atagtaagaa	aattcttagt	gctggcttag	cttcattgtat	600
ccaaaaacat	aaatgctact	ttactatcaa	ttgaagcata	ttatttcaat	tattctgggt	660
ataatatgga	ggcaggatga	aattgtttt	attcttttag	aattttttt	atcaggaaaaa	720
cagangtaaa	gtgctatcaa	ttactatttt	agagttctat	ttttgaaaaaa	gtgagaattta	780
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<210> 21

<211> 2367

<212> DNA

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 21

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tagacctaac	ctctttgagg	aaccacagag	cccaaggctg	gaaacccctca	gaatcctca	240
ccccctgtatc	ctccctgggg	accctgtgg	cctgtctcac	tgagcactct	tccatctgt	300
gatgtctggg	ctgtgtaca	agggagttccc	cttcaggtgt	tggtgcgtaga	catggtcact	360
cctgctgtat	gtctaggtgg	tagaaaccaa	ggacctaggg	aaataccagg	tacagccctt	420
ccatgctcat	ccagagcagg	acaaacaggc	caggcggtgt	caggagccca	ggtctccagc	480
tggagggAAC	gtcaaccctt	cgggtggggc	agggccctt	tgcacatct	aggcacagat	540
ggtaatgtag	acaccacagg	taagctggc	ttgttacata	ccctccccc	gattcagaaa	600
gaaaccaaAC	aaggagctt	gtgcggaaatg	aaacccctt	tcctccca	agcaactgtcg	660
actgttttgt	ggttgcatt	tgtggcagt	agcccttgg	tgttctgagg	ttgggctgt	720
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gccccaaagg	gtatgtttgc	ttctctccca	agagacaact	ttcttatcag	gctcaaatga	1500
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gccatgtaaa	aaaggaaagg	tggcgtgtc	cctgaagggt	caggggttag	agcagggaaa	1680
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aaaatgacat	ctaagtagct	gacataaaaa	tgaaaattct	gtgtactttt	atattagcag	2220
gcttcaaata	caaaccagaa	tatgagtaaa	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	2280
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<210> 22

<211> 118

<212> PRT

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 22

Met	Val	Thr	Pro	Ala	Gly	Cys	Leu	Gly	Gly	Arg	Asn	Gln	Gly	Pro	Arg
1							5		10					15	

Glu	Ile	Pro	Gly	Thr	Ala	Phe	Pro	Cys	Ser	Ser	Arg	Ala	Gly	Gln	Thr
								20					25		30

Gly	Gln	Ala	Val	Ser	Gly	Ala	Gln	Val	Ser	Ser	Trp	Arg	Glu	Arg	Gln
							35		40				45		

Pro	Phe	Gly	Gly	Ser	Arg	Gly	Pro	Leu	His	Ile	Leu	Gly	Thr	Asp	Gly
							50		55			60			

Asn	Val	Asp	Thr	Thr	Gly	Lys	Leu	Gly	Leu	Val	Pro	Thr	Pro	Pro	Arg
							65		70			75			80

Ile	Gln	Lys	Glu	Thr	Lys	Gln	Gly	Ala	Leu	Cys	Gly	Met	Lys	Pro	Pro
								85		90			95		

Phe	Leu	Pro	Glu	Ala	Leu	Leu	Thr	Val	Trp	Trp	Leu	Pro	Phe	Val	Ala
								100		105			110		

Val	Ser	Leu	Cys	Leu	Phe
				115	

<210> 23

<211> 3067

<212> DNA

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 23

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ctgcctctgc	ctctgacttg	ggttctggcc	tataggaaca	agacatttc	agtaatggaa	180
gaaggagctt	ccaggctggg	gaagatcatc	attccagtg	gtagcttgc	ctgagatgat	240
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tgctagcccc	taagagttga	acgaaatggg	caaggcccag	ctgaataac	aggaaacaca	360
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ggtcattgtc	attcgaagat	gtggctgtgg	gcttcaccag	ggaggagtgg	cagtttttgg	480
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caataggta	tcgaggcacc	aagccagatt	cgtcttcaa	gttggagcaa	ggagaacccc	600
cagggatagt	agaaggagca	gcccacagtc	aatctgtcc	aggtttgtt	atccagagta	660
gaagatatgc	agaaaaaagat	tctgatgcat	ttggtggtata	tgggagatca	tgcctccata	720
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<210> 24
<211> 478
<212> PRT
<213> Artificial

<220>
<223> cDNA or putative protein derived from a cDNA.

<400> 24

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Ser Phe Glu Asp Val Ala Val Gly Phe Thr Arg Glu Glu Trp Gln Phe
20 25 30

Leu Asp Gln Ser Gln Lys Val Leu Tyr Lys Glu Val Met Leu Glu Asn
35 40 45

Tyr Ile Asn Leu Val Ser Ile Gly Tyr Arg Gly Thr Lys Pro Asp Ser
50 55 60

Leu Phe Lys Leu Glu Gln Gly Glu Pro Pro Gly Ile Val Glu Gly Ala
65 70 75 80

Ala His Ser Gln Ile Cys Pro Gly Phe Val Ile Gln Ser Arg Arg Tyr
85 90 95

Ala Gly Lys Asp Ser Asp Ala Phe Gly Gly Tyr Gly Arg Ser Cys Leu
100 105 110

His Ile Lys Cys Asp Lys Thr Leu Thr Gly Val Lys Tyr His Arg Cys
115 120 125

Val Lys Pro Ser Ser Pro Lys Ser Gln Leu Asn Asp Leu Gln Lys Ile
130 135 140

Cys Ala Gly Gly Lys Pro His Glu Cys Ser Val Cys Gly Arg Ala Phe
145 150 155 160

Ser Arg Lys Ala Gln Leu Ile Gln His Gln Arg Thr Glu Arg Gly Glu
165 170 175

Lys Pro His Gly Cys Gly Glu Cys Gly Lys Thr Phe Met Arg Lys Ile
180 185 190

Gln Leu Thr Glu His Gln Arg Thr His Thr Gly Glu Lys Pro His Glu
195 200 205

Cys Ser Glu Cys Gly Lys Ala Phe Ser Arg Lys Ser Gln Leu Met Val
210 215 220

His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Ser Glu Cys
225 230 235 240

Gly Lys Ala Phe Ser Arg Lys Cys Arg Leu Asn Arg His Gln Arg Ser
245 250 255

His Thr Gly Glu Lys Leu Tyr Gly Cys Ser Val Cys Gly Lys Ala Phe
260 265 270

Ser Gln Lys Ala Tyr Leu Thr Ala His Gln Arg Leu His Thr Gly Asp
275 280 285

Lys Pro Tyr Lys Cys Ser Asp Cys Gly Arg Thr Phe Tyr Phe Lys Ser
290 295 300

Asp Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu
305 310 315 320

Cys Ser Glu Cys Glu Lys Ala Phe Arg Ser Lys Ser Lys Leu Ile Gln
325 330 335

His Gln Arg Thr His Thr Gly Glu Arg Pro Tyr Ser Cys Arg Glu Cys
340 345 350

Gly Lys Ala Phe Ala His Met Ser Val Leu Ile Lys His Glu Lys Thr
355 360 365

His Ile Arg Glu Thr Ala Ile Asn Ser Leu Thr Val Glu Lys Pro Ser
370 375 380

Ser Arg Ser His Thr Ser Leu Tyr Met Ser Glu Leu Ile Gln Glu Gln
385 390 395 400

Lys Thr Val Asn Thr Val Pro Ile Glu Met Pro Ser Ser Gly Thr Pro
405 410 415

Pro Leu Leu Asn Lys Ser Glu Arg Leu Val Gly Arg Asn Val Val Ile
420 425 430

Val Glu Gln Pro Phe Pro Arg Asn Gln Ala Phe Val Val Asn Gln Glu
435 440 445

Phe Glu Gln Arg Ile Ser Leu Thr Asn Glu Val Asn Val Ala Pro Ser
 450 455 460

Val Ile Asn Tyr Ile Leu Tyr Leu Thr Asp Ile Val Ser Glu
 465 470 475

<210> 25
 <211> 490
 <212> DNA
 <213> Artificial

<220>
 <223> cDNA or putative protein derived from a cDNA.

<400> 25
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 tggtaggat catabttca catatggccc tttctgaatc aaagtgcggc aaagtaaata 180
 ttgtctaagc tttaatccac tggtaggt cacaacttca aatacatgca tttttcaata 240
 tagggatat ttcttaactg atgagagagg cttagacatg agtgtgtat cttccttcaa 300
 tgcgtgtatg taatctttgt tagtataaaa gatattaaat ataggtgcca agaattaaat 360
 gtataattt tttataataaga gatggatata tttaaaattt attcatcaag gcatgatttt 420
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 aaataaaattc 490

<210> 26
 <211> 1167
 <212> DNA
 <213> Artificial

<220>
 <223> cDNA or putative protein derived from a cDNA.

<400> 26
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 tcaacagtag aaaaaactgg aagagggaaat ccagaccctt cgagttact acagtttaca 180
 caaatcttta tctcaagaag aaaaatctgaa ggatcgtttt aactataccc ttagtacata 240
 tgaagaagct taaaaaaaaca gagagaacat tggccatc actcaacaac aaaaatgagga 300
 actggctact caactgcaac aagctctgac agagcgagca aatatggat tacaacttca 360
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 aaacgacagt ctggggaaagc gatcacatct ggtgaccagg ctgcttcatt caacactgt 540
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 ccaagcttag ataaaaatcaa atcacaaatg tttaccact ttgtctgtca cttgagttat 660
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 tagaaaatcg ttaaagtgg ttaggatcat atcttcacat atggcccttt ctgaatcaa 840
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 ggtgccaaga attaaatgtt taatgtttt aataagagat ggatataattt aaattacatt 1080
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<211> 156

<212> PRT

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 27

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1 5 10 15

Gly Phe Leu Leu Gly Leu Asp Pro Leu Leu Ala Lys Leu Leu Ser Met
20 25 30

Gln Gln Ala Arg Glu Thr Ala Val Gln Gln Tyr Lys Lys Leu Glu Glu
35 40 45

Glu Ile Gln Thr Leu Arg Val Tyr Tyr Ser Leu His Lys Ser Leu Ser
50 55 60

Gln Glu Glu Asn Leu Lys Asp Gln Phe Asn Tyr Thr Leu Ser Thr Tyr
65 70 75 80

Glu Glu Ala Leu Lys Asn Arg Glu Asn Ile Val Ser Ile Thr Gln Gln
85 90 95

Gln Asn Glu Glu Leu Ala Thr Gln Leu Gln Gln Ala Leu Thr Glu Arg
100 105 110

Ala Asn Met Glu Leu Gln Leu Gln His Ala Arg Glu Ala Ser Gln Val
115 120 125

Ala Asn Glu Lys Val Gln Lys Leu Glu Arg Leu Val Asp Val Leu Arg
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Lys Lys Val Gly Thr Gly Thr Met Arg Thr Val Ile
145 150 155

<210> 28

<211> 2643

<212> DNA

<213> Artificial

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<400> 28

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<400> 29

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Thr	Thr	Gly	Ile	Asn	Lys	Ser	Thr	Gln	Pro	Asp	Glu	Gln	Leu	Thr	Met
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Asn Ser Glu Lys Ser Met His Arg Lys Ser Thr Glu Leu Val Asn Glu
35 40 45

Ile Thr Cys Glu Asn Thr Glu Trp Pro Gly Gln Arg Ser Thr Asn Phe
50 55 60

Gln Ile Ile Ser Ser Tyr Pro Asp Asp Glu Ser Val Tyr Cys Thr Thr
65 70 75 80

Glu Lys Tyr Asn Val Met Glu His Arg His Asn Asp Met His Tyr Glu
85 90 95

Cys Met Thr Pro Cys Gln Val Thr Ser Asp Ser Asp Lys Glu Lys Thr
100 105 110

Ile Ala Phe Leu Leu Lys Glu Leu Asp Ile Leu Arg Thr Ser Asn Lys
115 120 125

Lys Leu Gln Gln Lys Leu Ala Lys Glu Asp Lys Glu Gln Arg Lys Leu
130 135 140

Lys Phe Lys Leu Glu Leu Gln Glu Lys Glu Thr Glu Ala Lys Ile Ala
145 150 155 160

Glu Lys Thr Ala Ala Leu Val Glu Glu Val Tyr Phe Ala Gln Lys Glu
165 170 175

Arg Asp Glu Ala Val Met Ser Arg Leu Gln Leu Ala Ile Glu Glu Arg
180 185 190

Asp Glu Ala Ile Ala Arg Ala Lys His Met Glu Met Ser Leu Lys Val
195 200 205

Leu Glu Asn Ile Asn Pro Glu Glu Asn Asp Met Thr Leu Gln Glu Leu
210 215 220

Leu Asn Arg Ile Asn Asn Ala Asp Thr Gly Ile Ala Ile Gln Lys Asn
225 230 235 240

Gly Ala Ile Ile Val Asp Arg Ile Tyr Lys Thr Lys Glu Cys Lys Met
245 250 255

Arg Ile Thr Ala Glu Glu Met Ser Ala Leu Ile Glu Glu Arg Asp Ala
260 265 270

Ala Leu Ser Lys Cys Lys Arg Leu Glu Gln Glu Leu His His Val Lys
 275 280 285

Glu Gln Asn Gln Thr Ser Ala Asn Asn Met Arg His Leu Thr Ala Glu
290 295 300

Asn Asn Gln Glu Arg Ala Leu Lys Ala Lys Leu Leu Ser Met Gln Gln
 305 310 315 320

Ala Arg Glu Thr Ala Val Gln Gln Tyr Lys Lys Leu Glu Glu Glu Ile
 325 330 335

Gln Thr Leu Arg Val Tyr Tyr Ser Leu His Lys Ser Leu Ser Gln Glu
 340 345 350

Glu Asn Leu Lys Asp Gln Phe Asn Tyr Thr Leu Ser Thr Tyr Glu Glu
 355 360 365

Ala Leu Lys Asn Arg Glu Asn Ile Val Ser Ile Thr Gln Gln Gln Asn
370 375 380

Glu Glu Leu Ala Thr Gln Leu Gln Gln Ala Leu Thr Glu Arg Ala Asn
 385 390 395 400

Met Glu Leu Gln Leu Gln His Ala Arg Glu Ala Ser Gln Val Ala Asn
405 410 415

Glu Lys Val Gln Lys Leu Glu Arg Leu Val Asp Val Leu Arg Lys Lys
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Val Gly Thr Gly Thr Met Arg Thr Val Ile
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<211> 1686

<212> DNA

<213> Art.

<223>

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Arg Ala Lys His Met Glu Met Ser Leu Lys Val Leu Glu Asn Ile Asn
 20 25 30

Pro Glu Glu Asn Asp Met Thr Leu Gln Glu Leu Leu Asn Arg Ile Asn
 35 40 45

Asn Ala Asp Thr Gly Ile Ala Ile Gln Lys Asn Gly Ala Ile Ile Val
 50 55 60

Asp Arg Ile Tyr Lys Thr Lys Glu Cys Lys Met Arg Ile Thr Ala Glu
 65 70 75 80

Glu Met Ser Ala Leu Ile Glu Glu Arg Asp Ala Ala Leu Ser Lys Cys
 85 90 95

Lys Arg Leu Glu Gln Glu Leu His His Val Lys Glu Gln Asn Gln Thr
 100 105 110

Ser Ala Asn Asn Met Arg His Leu Thr Ala Glu Asn Asn Gln Glu Arg
 115 120 125

Ala Leu Lys Ala Lys Leu Leu Ser Met Gln Gln Ala Arg Glu Thr Ala
 130 135 140

Val Gln Gln Tyr Lys Lys Leu Glu Glu Glu Ile Gln Thr Leu Arg Val
 145 150 155 160

Tyr Tyr Ser Leu His Lys Ser Leu Ser Gln Glu Glu Asn Leu Lys Asp
 165 170 175

Gln Phe Asn Tyr Thr Leu Ser Thr Tyr Glu Glu Ala Leu Lys Asn Arg
 180 185 190

Glu Asn Ile Val Ser Ile Thr Gln Gln Gln Asn Glu Glu Leu Ala Thr
 195 200 205

Gln Leu Gln Gln Ala Leu Thr Glu Arg Ala Asn Met Glu Leu Gln Leu
 210 215 220

Gln His Ala Arg Glu Ala Ser Gln Val Ala Asn Glu Lys Val Gln Lys
 225 230 235 240

Leu Glu Arg Leu Val Asp Val Leu Arg Lys Lys Val Gly Thr Gly Thr
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Met Arg Thr Val Ile
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<210> 32

<211> 2452

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<400> 32

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 <213> Artificial

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<400> 33

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 20 25 30

Phe Gln Ile Ile Ser Ser Tyr Pro Asp Asp Glu Ser Val Tyr Cys Thr
 35 40 45

Thr Glu Lys Tyr Asn Val Met Glu His Arg His Asn Asp Met His Tyr
 50 55 60

Glu Cys Met Thr Pro Cys Gln Val Thr Ser Asp Ser Asp Lys Glu Lys
 65 70 75 80

Thr Ile Ala Phe Leu Leu Lys Glu Leu Asp Ile Leu Arg Thr Ser Asn
85 90 95

Lys Lys Leu Gln Gln Lys Leu Ala Lys Glu Asp Lys Glu Gln Arg Lys
100 105 110

Leu Lys Phe Lys Leu Glu Leu Gln Glu Lys Glu Thr Glu Ala Lys Ile
115 120 125

Ala Glu Lys Thr Ala Ala Leu Val Glu Glu Val Tyr Phe Ala Gln Lys
130 135 140

Glu Arg Asp Glu Ala Val Met Ser Arg Leu Gln Leu Ala Ile Glu Glu
145 150 155 160

Arg Asp Glu Ala Ile Ala Arg Ala Lys His Met Glu Met Ser Leu Lys
165 170 175

Val Leu Glu Asn Ile Asn Pro Glu Glu Asn Asp Met Thr Leu Gln Glu
180 185 190

Leu Leu Asn Arg Ile Asn Asn Ala Asp Thr Gly Ile Ala Ile Gln Lys
195 200 205

Asn Gly Ala Ile Ile Val Asp Arg Ile Tyr Lys Thr Lys Glu Cys Lys
210 215 220

Met Arg Ile Thr Ala Glu Glu Met Ser Ala Leu Ile Glu Glu Arg Asp
225 230 235 240

Ala Ala Leu Ser Lys Cys Lys Arg Leu Glu Gln Glu Leu His His Val
245 250 255

Lys Glu Gln Asn Gln Thr Ser Ala Asn Asn Met Arg His Leu Thr Ala
260 265 270

Glu Asn Asn Gln Glu Arg Ala Leu Lys Ala Lys Leu Leu Ser Met Gln
275 280 285

Gln Ala Arg Glu Thr Ala Val Gln Gln Tyr Lys Lys Leu Glu Glu
290 295 300

Ile Gln Thr Leu Arg Val Tyr Tyr Ser Leu His Lys Ser Leu Ser Gln
305 310 315 320

Glu Glu Asn Leu Lys Asp Gln Phe Asn Tyr Thr Leu Ser Thr Tyr Glu

325

330

335

Glu Ala Leu Lys Asn Arg Glu Asn Ile Val Ser Ile Thr Gln Gln Gln
 340 345 350

Asn Glu Glu Leu Ala Thr Gln Leu Gln Gln Ala Leu Thr Glu Arg Ala
 355 360 365

Asn Met Glu Leu Gln Leu Gln His Ala Arg Glu Ala Ser Gln Val Ala
 370 375 380

Asn Glu Lys Val Gln Lys Leu Glu Arg Leu Val Asp Val Leu Arg Lys
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Lys Val Gly Thr Gly Thr Met Arg Thr Val Ile
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<210> 34

<211> 2369

<212> DNA

<213> Artificial

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<400> 34

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<211> 442

<212> PRT

<213> Artificial

<220>

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<400> 35

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	15

Thr Thr Gly Ile Asn Lys Ser Thr Gln Pro Asp Glu Gln Leu Thr Met	
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	30

Asn Ser Glu Lys Ser Met His Arg Lys Ser Thr Glu Leu Val Asn Glu	
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Ile Thr Cys Glu Asn Thr Glu Trp Pro Gly Gln Arg Ser Thr Asn Phe	
50	55
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Gln Ile Ile Ser Ser Tyr Pro Asp Asp Glu Ser Val Tyr Cys Thr Thr	
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	75
	80

Glu Lys Tyr Asn Val Met Glu His Arg His Asn Asp Met His Tyr Glu	
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	95

Cys Met Thr Pro Cys Gln Val Thr Ser Asp Ser Asp Lys Glu Lys Thr	
100	105
	110

Ile Ala Phe Leu Leu Lys Glu Leu Asp Ile Leu Arg Thr Ser Asn Lys	
115	120
	125

Lys Leu Gln Gln Lys Leu Ala Lys Glu Asp Lys Glu Gln Arg Lys Leu	
130	135
	140

Lys Phe Lys Leu Glu Leu Gln Glu Lys Glu Thr Glu Ala Lys Ile Ala	
145	150
	155
	160

Glu Lys Thr Ala Ala Leu Val Glu Glu Val Tyr Phe Ala Gln Lys Glu
165 170 175

Arg Asp Glu Ala Val Met Ser Arg Leu Gln Leu Ala Ile Glu Glu Arg
180 185 190

Asp Glu Ala Ile Ala Arg Ala Lys His Met Glu Met Ser Leu Lys Val
195 200 205

Leu Glu Asn Ile Asn Pro Glu Glu Asn Asp Met Thr Leu Gln Glu Leu
210 215 220

Leu Asn Arg Ile Asn Asn Ala Asp Thr Gly Ile Ala Ile Gln Lys Asn
225 230 235 240

Gly Ala Ile Ile Val Asp Arg Ile Tyr Lys Thr Lys Glu Cys Lys Met
245 250 255

Arg Ile Thr Ala Glu Glu Met Ser Ala Leu Ile Glu Glu Arg Asp Ala
260 265 270

Ala Leu Ser Lys Cys Lys Arg Leu Glu Gln Glu Leu His His Val Lys
275 280 285

Glu Gln Asn Gln Thr Ser Ala Asn Asn Met Arg His Leu Thr Ala Glu
290 295 300

Asn Asn Gln Glu Arg Ala Leu Lys Ala Lys Leu Leu Ser Met Gln Gln
305 310 315 320

Ala Arg Glu Thr Ala Val Gln Gln Tyr Lys Lys Leu Glu Glu Glu Ile
325 330 335

Gln Thr Leu Arg Val Tyr Tyr Ser Leu His Lys Ser Leu Ser Gln Glu
340 345 350

Glu Asn Leu Lys Asp Gln Phe Asn Tyr Thr Leu Ser Thr Tyr Glu Glu
355 360 365

Ala Leu Lys Asn Arg Glu Asn Ile Val Ser Ile Thr Gln Gln Asn
370 375 380

Glu Glu Leu Ala Thr Gln Leu Gln Gln Ala Leu Thr Glu Arg Ala Asn
385 390 395 400

Met Glu Leu Gln Leu Gln His Ala Arg Glu Ala Ser Gln Val Ala Asn
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Glu Lys Val Gln Lys Leu Glu Arg Leu Val Asp Val Leu Arg Lys Lys
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Val Gly Thr Gly Thr Met Arg Thr Val Ile
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<213> Artificial

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35 40 45

Leu Arg Ala Met Val Tyr Leu Glu Asp Glu Thr Val Asn Lys Asp Leu
50 55 60

Cys Glu Lys Gly Thr Ile Gln Gln Met Ile Gly Ile Phe Lys Asn Ile
65 70 75 80

Ile Ser Lys Pro Asn Glu Lys Glu Glu Ala Ile Val Leu Glu Ile Gln
85 90 95

Ser Asp Ile Leu Leu Ile Leu Ser Gly Leu Cys Glu Asn His Ile Gln
100 105 110

Arg Lys Glu Ile Phe Gly Thr Glu Gly Val Asp Ile Val Leu His Val
115 120 125

Met Lys Thr Asp Pro Arg Lys Leu Gln Ser Gly Leu Gly Tyr Asn Val
130 135 140

Leu Leu Phe Ser Thr Leu Asp Ser Ile Trp Cys Cys Ile Leu Gly Cys
145 150 155 160

Tyr Pro Ser Glu Asp Tyr Phe Leu Glu Lys Glu Gly Ile Phe Leu Leu
165 170 175

Leu Asp Leu Leu Ala Leu Asn Gln Lys Lys Phe Cys Asn Leu Ile Leu
180 185 190

Gly Ile Met Val Glu Phe Cys Asp Asn Pro Lys Thr Ala Ala His Val
195 200 205

Asn Ala Trp Gln Gly Lys Asp Gln Thr Ala Ala Ser Leu Leu Ile

210

215

220

Lys Leu Trp Arg Lys Glu Glu Lys Glu Leu Gly Val Lys Arg Asp Lys
225 230 235 240

Asn Gly Lys Ile Ile Asp Phe Glu Asn Leu Pro Gly Leu Ser Ala Glu
245 250 255

Asp Phe Val Thr Leu Cys Ile Ile His Arg Tyr Leu Asp Phe Lys Ile
260 265 270

Gly Glu Ile Trp Asn Glu Ile Tyr Glu Glu Ile Lys Leu Glu Lys Leu
275 280 285

Arg Pro Val Thr Thr Asp Lys Lys Ala Leu Glu Ala Ile Thr Thr Ala
290 295 300

Ser Glu Asn Ile Gly Lys Met Val Ala Ser Leu Gln Ser Asp Ile Ile
305 310 315 320

Glu Ser Gln Ala Cys Gln Asp Met Gln Asn Glu Gln Lys Val Tyr Ala
325 330 335

Lys Ile Gln Ala Thr His Lys Gln Arg Glu Leu Ala Asn Lys Ser Trp
340 345 350

Glu Asp Phe Leu Ala Arg Thr Ser Asn Ala Lys Thr Leu Lys Lys Ala
355 360 365

Lys Arg Leu Gln Glu Lys Ala Ile Glu Ala Ser Arg Tyr His Lys Arg
370 375 380

Pro Gln Asn Ala Ile Phe His Gln Thr His Ile Lys Gly Leu Asn Thr
385 390 395 400

Met Val Pro Ser Gly Gly Val Val Thr Val Glu Ser Thr Pro Ala Arg
405 410 415

Leu Val Gly Gly Pro Leu Val Asp Thr Asp Ile Ala Leu Lys Lys Leu
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<400> 39

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Thr Ile Met Met Lys Ala Gln Ala Ala Ser Gly Ile Cys Thr His Leu
35 40 45

Asn Asp Pro Asp Pro Ser Gly Gln Leu Leu Phe Arg Ser Ser Glu Ile
50 55 60

Leu Trp Asn Leu Leu Glu Lys Ser Ser Lys Glu Glu Val Ile Gln Gln
65 70 75 80

Leu Ser Asn Leu Glu Cys Leu Leu Ala Leu Lys Glu Val Phe Lys Asn
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Leu Phe Met Arg Gly Phe Ser His Tyr Asp Arg Gln Leu Arg Asn Asp
100 105 110

Ile Leu Val Ile Thr Thr Ile Ile Ala Gln Asn Pro Glu Ala Pro Met
115 120 125

Ile Glu Cys Gly Phe Thr Lys Asp Leu Ile Leu Phe Ala Thr Phe Asn
130 135 140

Glu Val Lys Ser Gln Asn Leu Leu Val Lys Gly Leu Lys Leu Ser Asn
145 150 155 160

Ser Tyr Glu Asp Phe Glu Leu Lys Lys Leu Leu Phe Asn Val Ile Val
165 170 175

Ile Leu Cys Lys Asp Leu Pro Thr Val Gln Leu Leu Ile Asp Gly Lys
180 185 190

Val Ile Leu Ala Leu Phe Thr Tyr Val Lys Lys Pro Glu Lys Gln Lys
195 200 205

Ile Ile Asp Trp Ser Ala Ala Gln His Glu Glu Leu Gln Leu His Ala
210 215 220

Ile Ala Thr Leu Ser Ser Val Ala Pro Leu Leu Ile Glu Glu Tyr Met
225 230 235 240

Ser Cys Gln Gly Asn Ala Arg Val Leu Ala Phe Leu Glu Trp Cys Glu
245 250 255

Ser Glu Asp Pro Phe Phe Ser His Gly Asn Ser Phe His Gly Thr Gly
260 265 270

Gly Arg Gly Asn Lys Phe Ala Gln Met Arg Tyr Ser Leu Arg Leu Leu
275 280 285

Arg Ala Met Val Tyr Leu Glu Asp Glu Thr Val Asn Lys Asp Leu Cys
290 295 300

Glu Lys Gly Thr Ile Gln Gln Met Ile Gly Ile Phe Lys Asn Ile Ile
305 310 315 320

Ser Lys Pro Asn Glu Lys Glu Glu Ala Ile Val Leu Glu Ile Gln Ser
325 330 335

Asp Ile Leu Leu Ile Leu Ser Gly Leu Cys Glu Asn His Ile Gln Arg
340 345 350

Lys Glu Ile Phe Gly Thr Glu Gly Val Asp Ile Val Leu His Val Met
355 360 365

Lys Thr Asp Pro Arg Lys Leu Gln Ser Gly Leu Gly Tyr Asn Val Leu
370 375 380

Leu Phe Ser Thr Leu Asp Ser Ile Trp Cys Cys Ile Leu Gly Cys Tyr
385 390 395 400

Pro Ser Glu Asp Tyr Phe Leu Glu Lys Glu Gly Ile Phe Leu Leu Leu
405 410 415

Asp Leu Leu Ala Leu Asn Gln Lys Lys Phe Cys Asn Leu Ile Leu Gly
420 425 430

Ile Met Val Glu Phe Cys Asp Asn Pro Lys Thr Ala Ala His Val Asn
435 440 445

Ala Trp Gln Gly Lys Lys Asp Gln Thr Ala Ala Ser Leu Leu Ile Lys
450 455 460

Leu Trp Arg Lys Glu Glu Lys Glu Leu Gly Val Lys Arg Asp Lys Asn
465 470 475 480

Gly Lys Ile Ile Asp Thr Lys Lys Pro Leu Phe Thr Ser Phe Gln Glu
485 490 495

Glu Gln Lys Ile Ile Pro Leu Pro Ala Asn Cys Pro Ser Ile Ala Val
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Met Asp Val Ser Glu Asn Ile Arg Ala Lys Ile Tyr Ala Ile Leu Gly
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Lys Leu Asp Phe Glu Asn Leu Pro Gly Leu Ser Ala Glu Asp Phe Val
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Thr Leu Cys Ile Ile His Arg Tyr Leu Asp Phe Lys Ile Gly Glu Ile
545 550 555 560

Trp Asn Glu Ile Tyr Glu Glu Ile Lys Leu Glu Lys Leu Arg Pro Val
565 570 575

Thr Thr Asp Lys Lys Ala Leu Glu Ala Ile Thr Thr Ala Ser Glu Asn
580 585 590

Ile Gly Lys Met Val Ala Ser Leu Gln Ser Asp Ile Ile Glu Ser Gln
595 600 605

Ala Cys Gln Asp Met Gln Asn Glu Gln Lys Val Tyr Ala Lys Ile Gln
610 615 620

Ala Thr His Lys Gln Arg Glu Leu Ala Asn Lys Ser Trp Glu Asp Phe
625 630 635 640

Leu Ala Arg Thr Ser Asn Ala Lys Thr Leu Lys Lys Ala Lys Arg Leu
645 650 655

Gln Glu Lys Ala Ile Glu Ala Ser Arg Tyr His Lys Arg Pro Gln Asn
660 665 670

Ala Ile Phe His Gln Thr His Ile Lys Gly Leu Asn Thr Met Val Pro

675

680

685

Ser Gly Gly Val Val Thr Val Glu Ser Thr Pro Ala Arg Leu Val Gly
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Gly Pro Leu Val Asp Thr Asp Ile Ala Leu Lys Lys Leu Pro Ile Arg
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Gly Gly Ala Leu Gln Arg Val Lys Ala Val Lys Ile Val Asp Ala Pro
 725 730 735

Lys Lys Ser Ile Pro Thr
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<400> 40

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<210> 41
<211> 630
<212> PRT
<213> Artificial

<220>
<223> cDNA or putative protein derived from a cDNA.

<400> 41

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Trp Val Leu Lys Val Leu Gln His Leu Ser Thr Ser Glu Val Asn Cys
 20 25 30

Thr Ile Met Met Lys Ala Gln Ala Ala Ser Gly Ile Cys Thr His Leu
 35 40 45

Asn Asp Pro Asp Pro Ser Gly Gln Leu Leu Phe Arg Ser Ser Glu Ile
 50 55 60

Leu Trp Asn Leu Leu Glu Lys Ser Ser Lys Glu Glu Val Ile Gln Gln
65 70 75 80

Leu Ser Asn Leu Glu Cys Leu Leu Ala Leu Lys Glu Val Phe Lys Asn
 85 90 95

Leu Phe Met Arg Gly Phe Ser His Tyr Asp Arg Gln Leu Arg Asn Asp
 100 105 110

Ile Leu Val Ile Thr Thr Ile Ile Ala Gln Asn Pro Glu Ala Pro Met
115 120 125

Ile Glu Cys Gly Phe Thr Lys Asp Leu Ile Leu Phe Ala Thr Phe Asn
 130 135 140

Glu Val Lys Ser Gln Asn Leu Leu Val Lys Gly Leu Lys Leu Ser Asn
145 150 155 160

Ser Tyr Glu Asp Phe Glu Leu Lys Lys Leu Leu Phe Asn Val Ile Val
165 170 175

Ile Leu Cys Lys Asp Leu Pro Thr Val Gln Leu Leu Ile Asp Gly Lys
180 185 190

Val Ile Leu Ala Leu Phe Thr Tyr Val Lys Lys Pro Glu Lys Gln Lys
195 200 205

Ile Ile Asp Trp Ser Ala Ala Gln His Glu Glu Leu Gln Leu His Ala
210 215 220

Ile Ala Thr Leu Ser Ser Val Ala Pro Leu Leu Ile Glu Glu Tyr Met
225 230 235 240

Ser Cys Gln Gly Asn Ala Arg Val Leu Ala Phe Leu Glu Trp Cys Glu
245 250 255

Ser Glu Asp Pro Phe Phe Ser His Gly Asn Ser Phe His Gly Thr Gly
260 265 270

Gly Arg Gly Asn Lys Phe Ala Gln Met Arg Tyr Ser Leu Arg Leu Leu
275 280 285

Arg Ala Met Val Tyr Leu Glu Asp Glu Thr Val Asn Lys Asp Leu Cys
290 295 300

Glu Lys Gly Thr Ile Gln Gln Met Ile Gly Ile Phe Lys Asn Ile Ile
305 310 315 320

Ser Lys Pro Asn Glu Lys Glu Glu Ala Ile Val Leu Glu Ile Gln Ser
325 330 335

Asp Ile Leu Leu Ile Leu Ser Gly Leu Cys Glu Asn His Ile Gln Arg
340 345 350

Lys Glu Ile Phe Gly Thr Glu Gly Val Asp Ile Val Leu His Val Met
355 360 365

Lys Thr Asp Pro Arg Lys Leu Gln Ser Gly Leu Gly Tyr Asn Val Leu
370 375 380

Leu Phe Ser Thr Leu Asp Ser Ile Trp Cys Cys Ile Leu Gly Cys Tyr

385 390 395 400

Pro Ser Glu Asp Tyr Phe Leu Glu Lys Glu Gly Ile Phe Leu Leu Leu
405 410 415

Asp Leu Leu Ala Leu Asn Gln Lys Lys Phe Cys Asn Leu Ile Leu Gly
420 425 430

Ile Met Val Glu Phe Cys Asp Asn Pro Lys Thr Ala Ala His Val Asn
435 440 445

Ala Trp Gln Gly Lys Lys Asp Gln Thr Ala Ala Ser Leu Leu Ile Lys
450 455 460

Leu Trp Arg Lys Glu Glu Lys Glu Leu Gly Val Lys Arg Asp Lys Asn
465 470 475 480

Gly Lys Ile Ile Asp Phe Glu Asn Leu Pro Gly Leu Ser Ala Glu Asp
485 490 495

Phe Val Thr Leu Cys Ile Ile His Arg Tyr Leu Asp Phe Lys Ile Gln
500 505 510

Ala Thr His Lys Gln Arg Glu Leu Ala Asn Lys Ser Trp Glu Asp Phe
515 520 525

Leu Ala Arg Thr Ser Asn Ala Lys Thr Leu Lys Lys Ala Lys Arg Leu
530 535 540

Gln Glu Lys Ala Ile Glu Ala Ser Arg Tyr His Lys Arg Pro Gln Asn
545 550 555 560

Ala Ile Phe His Gln Thr His Ile Lys Gly Leu Asn Thr Met Val Pro
565 570 575

Ser Gly Gly Val Val Thr Val Glu Ser Thr Pro Ala Arg Leu Val Gly
580 585 590

Gly Pro Leu Val Asp Thr Asp Ile Ala Leu Lys Lys Leu Pro Ile Arg
595 600 605

Gly Gly Ala Leu Gln Arg Val Lys Ala Val Lys Ile Val Asp Ala Pro
610 615 620

Lys Lys Ser Ile Pro Thr
625 630

<210> 42
 <211> 2820
 <212> DNA
 <213> Artificial

<220>
 <223> cDNA or putative protein derived from a cDNA.

<400> 42

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cagccagtgg	aatctgtact	caccccaatg	acccagatcc	ctctggacag	cttttatttc	180
gttcatcaga	aatactttgg	aacttgcgtgg	aaaaatcttc	aaaagaagaa	gtcatacaac	240
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gaggtttcag	tcattatgac	cgtcagctta	gaaatgacat	attagtgatc	actacaatta	360
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tagaaaata	ctataaaaat	aaaaggacat	ataatttattt	tttatggaaa	acatcaacat	2160
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<210> 43
 <211> 661

<212> PRT

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 43

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Trp Val Leu Lys Val Leu Gln His Leu Ser Thr Ser Glu Val Asn Cys
20 25 30

Thr Ile Met Met Lys Ala Gln Ala Ala Ser Gly Ile Cys Thr His Leu
35 40 45

Asn Asp Pro Asp Pro Ser Gly Gln Leu Leu Phe Arg Ser Ser Glu Ile
50 55 60

Leu Trp Asn Leu Leu Glu Lys Ser Ser Lys Glu Glu Val Ile Gln Gln
65 70 75 80

Leu Ser Asn Leu Glu Cys Leu Leu Ala Leu Lys Glu Val Phe Lys Asn
85 90 95

Leu Phe Met Arg Gly Phe Ser His Tyr Asp Arg Gln Leu Arg Asn Asp
100 105 110

Ile Leu Val Ile Thr Thr Ile Ile Ala Gln Asn Pro Glu Ala Pro Met
115 120 125

Ile Glu Cys Gly Phe Thr Lys Asp Leu Ile Leu Phe Ala Thr Phe Asn
130 135 140

Glu Val Lys Ser Gln Asn Leu Leu Val Lys Gly Leu Lys Leu Ser Asn
145 150 155 160

Ser Tyr Glu Asp Phe Glu Leu Lys Lys Leu Leu Phe Asn Val Ile Val
165 170 175

Ile Leu Cys Lys Asp Leu Pro Thr Val Gln Leu Leu Ile Asp Gly Lys
180 185 190

Val Ile Leu Ala Leu Phe Thr Tyr Val Lys Lys Pro Glu Lys Gln Lys
195 200 205

Ile Ile Asp Trp Ser Ala Ala Gln His Glu Glu Leu Gln Leu His Ala

210	215	220	
Ile Ala Thr Leu Ser Ser Val Ala Pro Leu Leu Ile Glu Glu Tyr Met			
225	230	235	240
Ser Cys Gln Gly Asn Ala Arg Val Leu Ala Phe Leu Glu Trp Cys Glu			
245	250	255	
Ser Glu Asp Pro Phe Phe Ser His Gly Asn Ser Phe His Gly Thr Gly			
260	265	270	
Gly Arg Gly Asn Lys Phe Ala Gln Met Arg Tyr Ser Leu Arg Leu Leu			
275	280	285	
Arg Ala Met Val Tyr Leu Glu Asp Glu Thr Val Asn Lys Asp Leu Cys			
290	295	300	
Glu Lys Gly Thr Ile Gln Gln Met Ile Gly Ile Phe Lys Asn Ile Ile			
305	310	315	320
Ser Lys Pro Asn Glu Lys Glu Glu Ala Ile Val Leu Glu Ile Gln Ser			
325	330	335	
Asp Ile Leu Leu Ile Leu Ser Gly Leu Cys Glu Asn His Ile Gln Arg			
340	345	350	
Lys Glu Ile Phe Gly Thr Glu Gly Val Asp Ile Val Leu His Val Met			
355	360	365	
Lys Thr Asp Pro Arg Lys Leu Gln Ser Gly Leu Gly Tyr Asn Val Leu			
370	375	380	
Leu Phe Ser Thr Leu Asp Ser Ile Trp Cys Cys Ile Leu Gly Cys Tyr			
385	390	395	400
Pro Ser Glu Asp Tyr Phe Leu Glu Lys Glu Gly Ile Phe Leu Leu Leu			
405	410	415	
Asp Leu Leu Ala Leu Asn Gln Lys Lys Phe Cys Asn Leu Ile Leu Gly			
420	425	430	
Ile Met Val Glu Phe Cys Asp Asn Pro Lys Thr Ala Ala His Val Asn			
435	440	445	
Ala Trp Gln Gly Lys Lys Asp Gln Thr Ala Ala Ser Leu Leu Ile Lys			
450	455	460	

Leu Trp Arg Lys Glu Glu Lys Glu Leu Gly Val Lys Arg Asp Lys Asn
465 470 475 480

Gly Lys Ile Ile Asp Phe Glu Asn Leu Pro Gly Leu Ser Ala Glu Asp
485 490 495

Phe Val Thr Leu Cys Ile Ile His Arg Tyr Leu Asp Phe Lys Ile Gly
500 505 510

Glu Ile Trp Asn Glu Ile Tyr Glu Glu Ile Lys Leu Glu Lys Leu Arg
515 520 525

Pro Val Thr Thr Asp Lys Lys Ala Leu Glu Ala Ile Thr Thr Ala Ser
530 535 540

Glu Asn Ile Gly Lys Met Val Ala Ser Leu Gln Ser Asp Ile Ile Glu
545 550 555 560

Ser Gln Ala Cys Gln Asp Met Gln Asn Glu Gln Lys Val Tyr Ala Lys
565 570 575

Ile Gln Ala Thr His Lys Gln Arg Glu Leu Ala Asn Lys Ser Trp Glu
580 585 590

Asp Phe Leu Ala Arg Thr Ser Asn Ala Lys Thr Leu Lys Val Pro Ser
595 600 605

Gly Gly Val Val Thr Val Glu Ser Thr Pro Ala Arg Leu Val Gly Gly
610 615 620

Pro Leu Val Asp Thr Asp Ile Ala Leu Lys Lys Leu Pro Ile Arg Gly
625 630 635 640

Gly Ala Leu Gln Arg Val Lys Ala Val Lys Ile Val Asp Ala Pro Lys
645 650 655

Lys Ser Ile Pro Thr
660

<210> 44

<211> 565

<212> DNA

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 44

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aatttaatgg	agcatgtact	tatttgcatttgc	tgcggcagt	tcagcatag	ttaaagttag	240
agttctccata	tatttcataa	taagtgggtc	tgccaaaacc	catgtattaa	ataaaattgtc	300
caagtgaaac	tcgactaact	ttggccttgc	tgtatttgc	gaaggttaata	ttgttaactg	360
ttaataaata	cttctgacac	tacatttaaa	tgtttgcaga	ttctgcacaa	taattgtc	420
ttgtatgtt	gaaataatttgc	cattgaaatgc	aaaagccttgc	ctctggagca	480	
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gtattaaataa	actcagataa	aagac			565	

<210> 45

<211> 3471

<212> DNA

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 45

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cccgctotccc	tcctccctct	cgacagctc	ttcttccttc	ggcaaggct	tccacccctg	240
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<210> 46

<211> 452

<212> PRT

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 46

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20	25	30

Ser Pro Ser Ser Leu Ser Asp Ser Ser Ser Ser Phe Gly Lys Gly Phe		
35	40	45

His Pro Trp Lys Arg Ser Ser Ser Ser Ala Ser Cys Asn Val		
50	55	60

Val Gly Ser Ser Leu Ser Ser Phe Gly Val Ser Gly Ala Ser Arg Asn			
65	70	75	80

Gly Gly Ser Ser Ser Ala		
85	90	95

Ala Ala Ala Leu Val Ser Asp Ser Phe Ser Cys Gly Gly Ser Ser Ala		
100	105	110

His Ser Gln Asp Gly Ser His Gln Pro Val Phe Ile Ser Lys Val His

115

120

125

Thr Ser Val Asp Gly Leu Gln Gly Ile Tyr Pro Arg Val Gly Met Ala
130 135 140

His Pro Tyr Glu Ser Trp Phe Lys Pro Ser His Pro Gly Leu Gly Ala
145 150 155 160

Ala Gly Glu Val Gly Ser Ala Gly Ala Ser Ser Trp Trp Asp Val Gly
165 170 175

Ala Gly Trp Ile Asp Val Gln Asn Pro Asn Ser Ala Ala Ala Leu Pro
180 185 190

Gly Ser Leu His Pro Ala Ala Gly Gly Leu Gln Thr Ser Leu His Ser
195 200 205

Pro Leu Gly Gly Tyr Asn Ser Asp Tyr Ser Gly Leu Ser His Ser Ala
210 215 220

Phe Ser Ser Gly Ala Ser Ser His Leu Leu Ser Pro Ala Gly Gln His
225 230 235 240

Leu Met Asp Gly Phe Lys Pro Val Leu Pro Gly Ser Tyr Pro Asp Ser
245 250 255

Ala Pro Ser Pro Leu Ala Gly Ala Gly Gly Ser Met Leu Ser Ala Gly
260 265 270

Pro Ser Ala Pro Leu Gly Gly Ser Pro Arg Ser Ser Ala Arg Arg Tyr
275 280 285

Ser Gly Arg Ala Thr Cys Asp Cys Pro Asn Cys Gln Glu Ala Glu Arg
290 295 300

Leu Gly Pro Ala Gly Ala Ser Leu Arg Arg Lys Gly Leu His Ser Cys
305 310 315 320

His Ile Pro Gly Cys Gly Lys Val Tyr Gly Lys Thr Ser His Leu Lys
325 330 335

Ala His Leu Arg Trp His Thr Gly Glu Arg Pro Phe Val Cys Asn Trp
340 345 350

Leu Phe Cys Gly Lys Arg Phe Thr Arg Ser Asp Glu Leu Gln Arg His
355 360 365

Leu Arg Thr His Thr Gly Glu Lys Arg Phe Ala Cys Pro Val Cys Asn
 370 375 380

Lys Arg Phe Met Arg Ser Asp His Leu Ser Lys His Val Lys Thr His
 385 390 395 400

Ser Gly Gly Gly Gly Ser Ala Gly Ser Gly Ser Gly Gly
 405 410 415

Lys Lys Gly Ser Asp Thr Asp Ser Glu His Ser Ala Ala Gly Ser Pro
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Pro Cys His Ser Pro Glu Leu Leu Gln Pro Pro Glu Pro Gly His Arg
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Asn Gly Leu Glu
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<210> 47

<211> 501

<212> DNA

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 47

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<210> 48

<211> 3135

<212> DNA

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 48

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<210> 49
 <211> 112
 <212> PRT
 <213> Artificial

<220>
 <223> cDNA or putative protein derived from a cDNA.

<400> 49

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 20 25 30

Phe Pro Leu Thr His Thr Arg Arg Leu Glu Glu Glu Ala Ala Leu Asp
 35 40 45

Thr Pro Val Ala Pro Leu Pro Gly Gly Ala Gln Pro Gly Ala Leu Ala
 50 55 60

Ala Ala Leu Gly Ala Gly Pro Arg Arg Leu Gly Leu Gly Thr Gln Gly
 65 70 75 80

Trp Ala Arg Arg Arg Arg Trp Ala Gln Gly Ser Pro Glu Asn Pro His
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Glu Leu Thr Arg Arg Ala Ala Gly Pro Val Gly Thr Gly Pro Pro Arg
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<211> 2888

<212> DNA

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 50

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<213> Artificial

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ggc	ggc	ggc	gtggctcag	gtt	ggc	ggcag	300
ccgg	ggc	ggc	aggcaccgg	ccc	cc	ggcag	360
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<400> 53

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 20 25 30

Pro Val Ala Pro Leu Pro Gly Gly Ala Gln Pro Gly Ala Leu Ala Ala
35 40 45

Ala Leu Gly Ala Gly Pro Arg Arg Leu Gly Leu Gly Thr Gln Gly Trp
50 55 60

Ala Arg Arg Arg Arg Trp Ala Gln Gly Ser Pro Glu Asn Pro His Glu
65 70 75 80

Leu Thr Arg Arg Ala Ala Gly Pro Val Gly Thr Gly Pro Pro Arg
85 90 95

<210> 54
<211> 787
<212> DNA
<213> Artificial

<220>
<223> cDNA or putative protein derived from a cDNA.

<400> 54

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aaggatcaca gatggagaga cattttgcca cacgatgaat cacacaccac atctcatccc 180
cgagcttcag ctgcaggaca atgctccaaq aggcttqgtc ctcagagqctc acqtaaqcat 240

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cgtcaccctt attcccttc tgccctgagg cccaaagtctc tcctcggagg cctttctctc	660
ccatgggccc tgcaagcccc ttggggccat gtttcttgg gggatctct tgagccttga	720
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<210> 55

<211> 107

<212> PRT

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 55

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	10
	15

Leu Ser Thr Val Ser Pro Thr Val Lys Ala Leu Phe Gly Lys Thr Arg	
20	25
	30

Val Ser Pro Ile Phe Pro Phe Ser Pro Arg Ser Pro Phe Gln Pro Leu	
35	40
	45

Ile Pro Arg Thr Pro Gly Ser Pro Trp Gly Pro Val Gly Pro Ala Ser	
50	55
	60

Pro Leu Gly Pro Gly Phe Pro Ile Gly Pro Met Gly Pro Gly Lys Pro	
65	70
	75
	80

Val Gly Pro Lys Gly Pro Met Leu Pro Leu Gly Pro Ser Gly Pro Val	
85	90
	95

Gly Pro Thr Ser Pro Leu Phe Pro Phe Cys Pro	
100	105

<210> 56

<211> 1439

<212> DNA

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 56

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agccaggcgt	gagggagtga	cagcagcgca	ttcgcgggac	gagagcgtg	agtgagaacg	180
ccgcaccagg	tctgatctca	gagctgaagc	ttggctgtgcc	ctggggccac	atcgcagcca	240
aaggctgggg	ctccctgcag	ggccctccag	ttctctgcct	gcacggctgg	ctggacaatg	300
ccagctcctt	cgacagactc	atcccttcc	ttccgcgaaga	cttttattac	tttgccatgg	360
atttcgagg	tcatgggctc	tcgtcccatt	acagcccagg	tgtcccatat	tacctccaga	420
cttttgcag	ttagatccga	agagttgtgg	cagccttgaat	atggaatcga	ttctccattc	480
tgggccacag	cttcgggtgc	gtcggtggcg	aatgttttt	ctgtaccttc	cccgagatgg	540
tggataaaact	tatcttgcgt	gacacgcgc	tctttctct	ggaatcagat	gaaatggaga	600
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cagtccacgg	atattttgtat	tcaagacaga	attactctga	gaaggagtcc	ctgtcggtca	960
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<210> 57
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<212> PRT
<213> Artifici

<220>
<223> cDNA or putative protein derived from a cDNA.

<400> 57

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Val Pro Trp Gly His Ile Ala Ala Lys Ala Trp Gly Ser Leu Gln Gly
20 25 30

Pro Pro Val Leu Cys Leu His Gly Trp Leu Asp Asn Ala Ser Ser Phe
 35 40 45

Asp Arg Leu Ile Pro Leu Leu Pro Gln Asp Phe Tyr Tyr Val Ala Met
50 55 60

Asp Phe Gly Gly His Gly Leu Ser Ser His Tyr Ser Pro Gly Val Pro
65 70 75 80

Tyr Tyr Leu Gln Thr Phe Val Ser Glu Ile Arg Arg Val Val Ala Ala
 85 90 95

Leu Lys Trp Asn Arg Phe Ser Ile Leu Gly His Ser Phe Gly Gly Val
100 105 110

Val Gly Gly Met Phe Phe Cys Thr Phe Pro Glu Met Val Asp Lys Leu
115 120 125

Ile Leu Leu Asp Thr Pro Leu Phe Leu Leu Glu Ser Asp Glu Met Glu
130 135 140

Asn Leu Leu Thr Tyr Lys Arg Arg Ala Ile Glu His Val Leu Gln Val
145 150 155 160

Glu Ala Ser Gln Glu Pro Ser His Val Phe Ser Leu Lys Gln Leu Leu
165 170 175

Gln Arg Leu Leu Lys Ser Asn Ser His Leu Ser Glu Glu Cys Gly Glu
180 185 190

Leu Leu Leu Gln Arg Gly Thr Thr Lys Val Ala Thr Gly Leu Val Leu
195 200 205

Asn Arg Asp Gln Arg Leu Ala Trp Ala Glu Asn Ser Ile Asp Phe Ile
210 215 220

Ser Arg Glu Leu Cys Ala His Ser Ile Arg Lys Leu Gln Ala His Val
225 230 235 240

Leu Leu Ile Lys Ala Val His Gly Tyr Phe Asp Ser Arg Gln Asn Tyr
245 250 255

Ser Glu Lys Glu Ser Leu Ser Phe Met Ile Asp Thr Met Lys Ser Thr
260 265 270

Leu Lys Glu Gln Phe Gln Phe Val Glu Val Pro Gly Asn His Cys Val
275 280 285

His Met Ser Glu Pro Gln His Val Ala Ser Ile Ile Ser Ser Phe Leu
290 295 300

Gln Cys Thr His Met Leu Pro Ala Gln Leu
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<211> 1280

<212> DNA

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 58

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ccgcaccagg	tctgatctca	gagctgaagc	tggctgtgcc	ctggggccac	atcgcagcca	240
aagcctgggg	ctccctgcag	ggccctccag	ttctctgcct	gcacggctgg	ctggacaatg	300
ccagctcctt	cgacagactc	atccctcttc	tcccgcaga	cttttattac	gttgcacatgg	360
atttcggagg	tcatgggctc	tcgtcccatt	acagcccagg	tgtcccata	tacctccaga	420
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<210> 59

<211> 209

<212> PRT

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 59

Met	Ser	Glu	Asn	Ala	Ala	Pro	Gly	Leu	Ile	Ser	Glu	Leu	Lys	Leu	Ala
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Val	Pro	Trp	Gly	His	Ile	Ala	Ala	Lys	Ala	Trp	Gly	Ser	Leu	Gln	Gly
					20			25				30			

Pro	Pro	Val	Leu	Cys	Leu	His	Gly	Trp	Leu	Asp	Asn	Ala	Ser	Ser	Phe
						35		40				45			

Asp	Arg	Leu	Ile	Pro	Leu	Leu	Pro	Gln	Asp	Phe	Tyr	Tyr	Val	Ala	Met
						50		55				60			

Asp	Phe	Gly	Gly	His	Gly	Leu	Ser	Ser	His	Tyr	Ser	Pro	Gly	Val	Pro
						65		70		75		80			

Tyr	Tyr	Leu	Gln	Thr	Phe	Val	Ser	Glu	Ile	Arg	Arg	Val	Val	Ala	Ala
						85			90			95			

Leu	Lys	Trp	Asn	Arg	Phe	Ser	Ile	Leu	Gly	His	Ser	Phe	Gly	Gly	Val
							100		105			110			

Val Gly Gly Met Phe Phe Cys Thr Phe Pro Glu Met Val Asp Lys Leu
 115 120 125

Ile Leu Leu Asp Thr Pro Leu Phe Leu Leu Glu Ser Asp Glu Met Glu
 130 135 140

Asn Leu Leu Thr Tyr Lys Arg Arg Ala Ile Glu His Val Leu Gln Val
145 150 155 160

Glu Ala Ser Gln Glu Pro Ser His Val Phe Ser Leu Lys Gln Leu Leu
165 170 175

Gln Arg Leu Leu Lys Ser Asn Ser His Leu Ser Glu Glu Cys Gly Glu
 180 185 190

Leu Leu Leu Gln Arg Gly Thr Thr Lys Val Ala Thr Gly Arg Glu Gln
 195 200 205

His

<210> 60
<211> 1957
<212> DNA
<213> Artificial

<220>
<223> cDNA or putative protein derived from a cDNA.

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ccctcttatac actggaggcg gggtaggatc caggaagcag cgctggctg agagtgggc	300
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atggtgcccc ccccccccaa ctgggtggaa gaagctttag ggtatgcagc tggggagggaa	780
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cccataccccg gtccccaccgc accctggagt ccagccatca ccaaggtctg gagctca	1080
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cagggaaagg cgggagtgtt ctttccttct tccccctatt cattctcccc ttttggcatc	1260
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tcgcctggc	agagaacagc	attgacttca	tcagcaggga	gctgtgtgc	cattccatca	1560
ggaagctgca	ggcccatgtc	ctgttgcata	aagcagtcca	cgatatttt	gattcaagac	1620
agaattactc	tgagaaggag	tccctgtcg	tcatgataga	cacatgaaa	tccaccctca	1680
aagaggtaag	acggggctca	ggcagctgg	gtccagccac	tgtcgcccac	tctggtccca	1740
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tgaccaccag	gatctatcag	gcctcatgct	ccactgtgg	cagtccctag	aggcctaggg	1860
acacatgtaa	tcagaattaa	ggaaacagag	accttggtg	gggaaccct	gccaggtca	1920
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<210> 61

<211> 244

<212> PRT

<213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 61

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Ser	Phe	Phe	Pro	Leu	Phe	Ile	Leu	Pro	Phe	Trp	His	Pro	His	Met	Phe
					20				25					30	

Phe	Cys	Thr	Phe	Pro	Glu	Met	Val	Asp	Lys	Leu	Ile	Leu	Leu	Asp	Thr
					35			40					45		

Pro	Leu	Phe	Leu	Leu	Glu	Ser	Asp	Glu	Met	Glu	Asn	Leu	Leu	Thr	Tyr
					50			55			60				

Lys	Arg	Arg	Ala	Ile	Glu	His	Val	Leu	Gln	Val	Glu	Ala	Ser	Gln	Glu
					65			70		75			80		

Pro	Ser	His	Val	Phe	Ser	Leu	Lys	Gln	Leu	Leu	Gln	Arg	Leu	Leu	Lys
					85			90			95				

Ser	Asn	Ser	His	Leu	Ser	Glu	Glu	Cys	Gly	Glu	Leu	Leu	Gln	Arg
					100			105			110			

Gly	Thr	Thr	Lys	Val	Ala	Thr	Gly	Leu	Val	Leu	Asn	Arg	Asp	Gln	Arg
					115			120			125				

Leu	Ala	Trp	Ala	Glu	Asn	Ser	Ile	Asp	Phe	Ile	Ser	Arg	Glu	Leu	Cys
					130			135			140				

Ala	His	Ser	Ile	Arg	Lys	Leu	Gln	Ala	His	Val	Leu	Leu	Ile	Lys	Ala
					145			150		155			160		

Val His Gly Tyr Phe Asp Ser Arg Gln Asn Tyr Ser Glu Lys Glu Ser
 165 170 175

Leu Ser Phe Met Ile Asp Thr Met Lys Ser Thr Leu Lys Glu Val Arg
 180 185 190

Arg Gly Ser Gly Ser Trp Cys Pro Ala Thr Val Ala His Ser Gly Pro
 195 200 205

Thr Ser Pro Ile Ser Ser His Ala Leu Gly Arg Pro Trp Val Cys Pro
 210 215 220

Gln Ala Gln Gln Val Thr Thr Arg Ile Tyr Gln Ala Ser Cys Ser Thr
 225 230 235 240

Val Val Ser Pro

<210> 62
 <211> 1165
 <212> DNA
 <213> Artificial

<220>
 <223> cDNA or putative protein derived from a cDNA.

<400> 62
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 cctggggcca catcgcagcc aaagcctggg gctccctgca gggccctcca gttctctgcc 180
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 aatggaatcg attctccatt ctgggccaca gcttcggtgg cgtcgtggc ggaatgtttt 420
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<210> 63
 <211> 351
 <212> PRT
 <213> Artificial

<220>

<223> cDNA or putative protein derived from a cDNA.

<400> 63

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20 25 30

Ser Glu Leu Lys Leu Ala Val Pro Trp Gly His Ile Ala Ala Lys Ala
35 40 45

Trp Gly Ser Leu Gln Gly Pro Pro Val Leu Cys Leu His Gly Trp Leu
50 55 60

Asp Asn Ala Ser Ser Phe Asp Arg Leu Ile Pro Leu Leu Pro Gln Asp
65 70 75 80

Phe Tyr Tyr Val Ala Met Asp Phe Gly Gly His Gly Leu Ser Ser His
85 90 95

Tyr Ser Pro Gly Val Pro Tyr Tyr Leu Gln Thr Phe Val Ser Glu Ile
100 105 110

Arg Arg Val Val Ala Ala Leu Lys Trp Asn Arg Phe Ser Ile Leu Gly
115 120 125

His Ser Phe Gly Gly Val Val Gly Gly Met Phe Phe Cys Thr Phe Pro
130 135 140 145

Glu Met Val Asp Lys Leu Ile Leu Leu Asp Thr Pro Leu Phe Leu Leu
145 150 155 160

Glu Ser Asp Glu Met Glu Asn Leu Leu Thr Tyr Lys Arg Arg Ala Ile
165 170 175

Glu His Val Leu Gln Val Glu Ala Ser Gln Glu Pro Ser His Val Phe
180 185 190

Ser Leu Lys Gln Leu Leu Gln Arg Leu Leu Lys Ser Asn Ser His Leu
195 200 205

Ser Glu Glu Cys Gly Glu Leu Leu Gln Arg Gly Thr Thr Lys Val
210 215 220

Ala Thr Gly Leu Val Leu Asn Arg Asp Gln Arg Leu Ala Trp Ala Glu

225	230	235	240			
Asn Ser Ile Asp Phe Ile Ser Arg Glu Leu Cys Ala His Ser Ile Arg						
245	250	255				
Lys Leu Gln Ala His Val Leu Ile Lys Ala Val His Gly Tyr Phe						
260	265	270				
Asp Ser Arg Gln Asn Tyr Ser Glu Lys Glu Ser Leu Ser Phe Met Ile						
275	280	285				
Asp Thr Met Lys Ser Thr Leu Lys Glu Val Arg Arg Gly Ser Gly Ser						
290	295	300				
Trp Cys Pro Ala Thr Val Ala His Ser Gly Pro Thr Ser Pro Ile Ser						
305	310	315	320			
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<211> 601

<212> PRT

<213> Artificial

<220>

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<400> 66

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Thr	Arg	Val	Gly	Ser	Cys	Asp	Ser	Met	Met	Ser	Ser	Thr	Ser	Thr	Arg
								20		25			30		

Ser	Gly	Ser	Ser	Asp	Ser	Ser	Tyr	Asp	Phe	Leu	Ser	Thr	Glu	Glu	Lys
								35		40		45			

Glu	Cys	Leu	Leu	Phe	Leu	Glu	Glu	Thr	Ile	Gly	Ser	Leu	Asp	Thr	Glu
						50		55			60				

Ala	Asp	Ser	Gly	Leu	Ser	Thr	Asp	Glu	Ser	Glu	Pro	Ala	Thr	Thr	Pro
65							70			75			80		

Arg	Gly	Phe	Arg	Ala	Leu	Pro	Ile	Thr	Gln	Pro	Thr	Pro	Arg	Gly	Gly
							85		90		95				

Pro	Glu	Glu	Thr	Ile	Thr	Gln	Gln	Gly	Arg	Thr	Pro	Arg	Thr	Val	Thr
								100		105		110			

Glu Ser Ser Ser Ser His Pro Pro Glu Pro Gln Gly Leu Gly Leu Arg
115 120 125

Ser Gly Ser Tyr Ser Leu Pro Arg Asn Ile His Ile Ala Arg Ser Gln
130 135 140

Asn Phe Arg Lys Ser Thr Thr Gln Ala Ser Ser His Asn Pro Gly Glu
145 150 155 160

Pro Gly Arg Leu Ala Pro Glu Pro Glu Lys Glu Gln Val Ser Gln Ser
165 170 175

Ser Gln Pro Arg Gln Ala Pro Ala Ser Pro Gln Glu Ala Ala Leu Asp
180 185 190

Leu Asp Val Val Leu Ile Pro Pro Glu Ala Phe Arg Asp Thr Gln
195 200 205

Pro Glu Gln Cys Arg Glu Ala Ser Leu Pro Glu Gly Pro Gly Gln Gln
210 215 220

Gly His Thr Pro Gln Leu His Thr Pro Ser Ser Ser Gln Glu Arg Glu
225 230 235 240

Gln Thr Pro Ser Glu Ala Met Ser Gln Lys Ala Lys Glu Thr Val Ser
245 250 255

Thr Arg Tyr Thr Gln Pro Gln Pro Pro Pro Ala Gly Leu Pro Gln Asn
260 265 270

Ala Arg Ala Glu Asp Ala Pro Leu Ser Ser Gly Glu Asp Pro Asn Ser
275 280 285

Arg Leu Ala Pro Leu Thr Thr Pro Lys Pro Arg Lys Leu Pro Pro Asn
290 295 300

Ile Val Leu Lys Ser Ser Arg Ser Ser Phe His Ser Asp Pro Gln His
305 310 315 320

Trp Leu Ser Arg His Thr Glu Ala Ala Pro Gly Asp Ser Gly Leu Ile
325 330 335

Ser Cys Ser Leu Gln Glu Gln Arg Lys Ala Arg Lys Glu Ala Leu Glu
340 345 350

Lys Leu Gly Leu Pro Gln Asp Gln Asp Glu Pro Gly Leu His Leu Ser
355 360 365

Lys Pro Thr Ser Ser Ile Arg Pro Lys Glu Thr Arg Ala Gln His Leu
370 375 380

Ser Pro Ala Pro Gly Leu Ala Gln Pro Ala Ala Pro Ala Gln Ala Ser
385 390 395 400

Ala Ala Ile Pro Ala Ala Gly Lys Ala Leu Ala Gln Ala Pro Ala Pro
405 410 415

Ala Pro Gly Pro Ala Gln Gly Pro Leu Pro Met Lys Ser Pro Ala Pro
420 425 430

Gly Asn Val Ala Ala Ser Lys Ser Met Pro Ile Pro Ile Pro Lys Ala
435 440 445

Pro Arg Ala Asn Ser Ala Leu Thr Pro Pro Lys Pro Glu Ser Gly Leu
450 455 460

Thr Leu Gln Glu Ser Asn Thr Pro Gly Leu Arg Gln Met Asn Phe Lys
465 470 475 480

Ser Asn Thr Leu Glu Arg Ser Gly Val Gly Leu Ser Ser Tyr Leu Ser
485 490 495

Thr Glu Lys Asp Ala Ser Pro Lys Thr Ser Thr Ser Leu Gly Lys Gly
500 505 510

Ser Phe Leu Asp Lys Ile Ser Pro Ser Val Leu Arg Asn Ser Arg Pro
515 520 525

Arg Pro Ala Ser Leu Gly Thr Gly Lys Asp Phe Ala Gly Ile Gln Val
530 535 540

Gly Lys Leu Ala Asp Leu Glu Gln Glu Gln Ser Ser Lys Arg Leu Ser
545 550 555 560

Tyr Gln Gly Gln Ser Arg Asp Lys Leu Pro Arg Pro Pro Cys Val Ser
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Val Lys Ile Ser Pro Lys Gly Val Pro Asn Glu His Arg Arg Glu Ala
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Leu Lys Lys Leu Gly Leu Leu Lys Glu
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<212> DNA
<213> Artificial

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<212> DNA
<213> Artificial

<220>
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<210> 69

<211> 323

<212> PRT

<213> Artificial

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<400> 69

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Glu	Gly	Ala	Gly	Gln	Ala	Pro	Gln	Lys	Arg	Ala	Arg	Ala	Gly	Ala	Glu
								20					25		30

Pro	Gln	Leu	Pro	Ala	Thr	Pro	Ala	Leu	Pro	Gly	Gly	Lys	Met	Val	Ala
					35				40				45		

Arg	Arg	Arg	Lys	Cys	Ala	Arg	Gly	Thr	Arg	Arg	Pro	Tyr	Pro	Glu	Pro
						50				55			60		

Thr	Ala	Tyr	Ala	Ala	Ile	Pro	Ile	Lys	Phe	Ser	Glu	Lys	Gln	Gln	Ala
					65			70			75			80	

Ser	His	Tyr	Leu	Tyr	Val	Arg	Ala	His	Gly	Val	Arg	Gln	Gly	Thr	Lys
								85			90			95	

Ser	Thr	Trp	Pro	Gln	Lys	Arg	Thr	Leu	Phe	Val	Leu	Asn	Val	Pro	Pro
						100			105				110		

Tyr	Cys	Thr	Glu	Glu	Ser	Leu	Ser	Arg	Leu	Leu	Ser	Thr	Cys	Gly	Leu
						115			120			125			

Val Gln Ser Val Glu Leu Gln Glu Lys Pro Asp Leu Ala Glu Ser Pro
130 135 140

Lys Glu Ser Arg Ser Lys Phe Phe His Pro Lys Pro Val Pro Gly Phe
145 150 155 160

Gln Val Ala Tyr Val Val Phe Gln Lys Pro Ser Gly Val Ser Ala Ala
165 170 175

Leu Ala Leu Lys Gly Pro Leu Leu Val Ser Thr Glu Ser His Pro Val
180 185 190

Lys Ser Gly Ile His Lys Trp Ile Ser Asp Tyr Ala Asp Ser Val Pro
195 200 205

Asp Pro Glu Ala Leu Arg Val Glu Val Asp Thr Phe Met Glu Ala Tyr
210 215 220

Asp Gln Lys Ile Ala Glu Glu Glu Ala Lys Ala Lys Gly Glu Glu Gly
225 230 235 240

Val Pro Asp Glu Glu Gly Trp Val Lys Val Thr Arg Arg Gly Arg Arg
245 250 255

Leu Cys Ser Pro Gly Leu Arg Gln Pro Ala Cys Gly Cys Trp Arg Gly
260 265 270

Arg Asp Gly Ser Ala Ala Lys Arg Ala Ala Gln Leu Leu Arg Leu Ala
275 280 285

Ala Ser Arg Glu Gln Asp Gly Ala Ser Ser Ala Ala Arg Lys Lys Phe
290 295 300

Glu Glu Asp Lys Gln Arg Ile Glu Leu Leu Arg Ala Gln Arg Lys Phe
305 310 315 320

Arg Pro Tyr